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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,478	03/16/2004	Dong-Hoon Kang	4611-036	4108

22440 7590 12/28/2006  
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EXAMINER
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AMADIZ, RODNEY

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/28/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/802,478

Applicant(s)

KANG, DONG-HOON

Examiner

Rodney Amadiz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/16/04 &amp; 7/24/06</u>                                     | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 6 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Davis et al. (USPGPUB 2003/0034959—herein referred to as “Davis”).

As to **Claim 1**, Davis teaches an image navigation module for an optical mouse, comprising: a module unit in which a light emitting element and a sensor die are constructed on a board in a chip-on board manner (***Fig. 2, note Light Emitting Element 34 and Sensor Die 16 on board 36***); and a lid type prism-integrated lens put on the board to cover regions where the light emitting element and the sensor die are constructed (***Figs. 2 and 3, note Lid type Prism-integrated lens 38***).

As to **Claim 2**, Davis teaches that the sensor die is a single chip sensor into which an image sensor for detecting light converged by the lid type prism-integrated lens and a Main Control Unit (MCU) for processing detected signals are integrated (***Fig.***

**4, note Reference Numbers 98 and 99 and MCU 72 and Sensor 82 and 84 and Pg. 2, ¶ 24).**

As to **Claim 3**, Davis teaches the lid type prism-integrated lens including a first lens surface for converging light irradiated from the light emitting element (**Fig. 3, note first curved portion of 38 next to LED 34**), a reflection surface for reflecting the converged light (**Fig. 3, note Prism 38D**), and a second lens surface for converging light (**Fig. 3, note Lens 38C**).

As to **Claim 6**, Davis teaches a light interception plate located between the light emitting element and the sensor die to prevent the light irradiated from the light emitting element from being directly incident on the sensor die (**Fig. 3, note Prism 38D**).

As to **Claim 7**, Davis teaches an optical mouse having an image navigation module (Fig. 2, Reference Number 30), the image navigation module comprising: a module unit in which a light emitting element and a sensor die are constructed on a board in a chip-on board manner (**Fig. 2, note Light Emitting Element 34 and Sensor Die 16 on board 36**); and a lid type prism-integrated lens put on the board to cover regions where the light emitting element and the sensor die are constructed (**Figs. 2 and 3, note Lid type Prism-integrated lens 38**).

3. Claims 1 and 7 is rejected under 35 U.S.C. 102(e) as being anticipated by Chang et al. (USPGPUB 2004/0246233—herein referred to as “Reference 233”).

As to **Claims 1 and 7**, Reference 233 teaches an optical mouse having an image navigation module (**Fig. 2, Reference Numbers 21 and 30**) the image navigation

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module comprising: a module unit in which a light emitting element and a sensor die are constructed on a board in a chip-on board manner (***Figs. 2, 4 and 5, note Light Emitting Element 212 and Sensor Die 211 on board 21***); and a lid type prism-integrated lens put on the board to cover regions where the light emitting element and the sensor die are constructed (***Figs. 2, 4 and 5, note Lid Type Prism Integrated Lens 30***).

4. Claims 1 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang et al. (USPGPUB 2005/0001818—herein referred to as “Reference 818”).

As to **Claims 1 and 7**, Reference 818 teaches an optical mouse having an image navigation module (***Fig. 1, Reference Numbers 21 and 3***) the image navigation module comprising: a module unit in which a light emitting element and a sensor die are constructed on a board in a chip-on board manner (***Fig. 1, note Light Emitting Element 22 and Sensor Die 211 on board 2***); and a lid type prism-integrated lens put on the board to cover regions where the light emitting element and the sensor die are constructed (***Figs. 1-3, note Lid Type Prism Integrated Lens 32***).

5. Claims 1 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang et al. (USPGPUB 2005/0093825—herein referred to as “Reference 825”).

As to **Claims 1 and 7**, Reference 825 teaches an optical mouse having an image navigation module (***Fig. 2, Reference Numbers 2 and 4***) the image navigation module comprising: a module unit in which a light emitting element and a sensor die are

constructed on a board in a chip-on board manner (**Fig. 2, note Light Emitting Element 41 and Sensor Die 42 on board 4 and 3**); and a lid type prism-integrated lens put on the board to cover regions where the light emitting element and the sensor die are constructed (**Figs. 2 and 3, note Lid Type Prism Integrated Lens 25**).

**Claim Rejections - 35 USC § 103**

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Leong et al. (U.S. Patent 6,967,321—herein referred to as “Leong”).

As to **Claim 4**, Davis teaches the reflection surface of the lid type prism-integrated lens located below the light emitting element (**Fig. 3, note Reflection surface 38D**), and the second lens surface is formed to be located below the sensor die (**Fig. 3, note second lens 38C**). Davis, however, fails to teach the first lens surface of the lid type prism-integrated lens located below the light emitting element and the sensor die and the light emitting element formed on a lower surface of the board. Examiner cites Leong to teach the first lens surface of the lid type prism-integrated lens located below the light emitting element and the sensor die and the light emitting element formed on a lower surface of the board (**Fig. 8, note sensor die 62 and light emitting element 84 formed on a lower surface of the board 84 and also note first**

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***lens 86 located below light emitting element 84).*** At the time the invention was made, it would have obvious to a person of ordinary skill in the art to have place the sensor die and light emitting element on the lower surface of a board as well as placing the first lens underneath the light emitting element as taught by Leong in the image navigation module taught by Davis so that the respective pieces would be protected from the board.

As to **Claim 5**, Davis teaches the reflection surface formed to be inclined at an angle that is capable of reflecting the light irradiated from the light emitting element toward a contact surface outside of the optical mouse (***Fig. 3, note angle of reflection surface 38D and note the path of light from the light emitting element 34).***

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chin	USPGPUB 2003/0142075
Bohn	U.S. Patent 7,129,929
Bohn	U.S. Patent 7,068,257

***Inquiries***

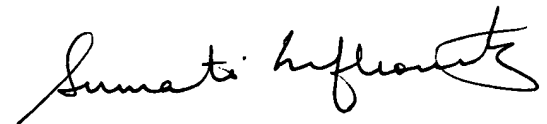
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney Amadiz whose telephone number is (571) 272-7762. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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12/15/06  
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